

REMARKS

The present Amendment amends claims 1-12. Therefore, the present application has pending claims 1-12.

In paragraph 1 of the Office Action the Examiner objected to the July 24, 2000 Information Disclosure Statement. Particularly, the Examiner alleges that the July 24, 2000 Information Disclosure Statement fails to comply with 37 CFR §1.97, 1.98 and MPEP §609 being that the Examiner alleges that it does not have the proper format. Particularly, the Examiner alleges that the format should be according to Form PTO-1449. The Examiner reasons for not considering the July 24, 2000 Information Disclosure Statement are completely in error being that the use of Form PTO-1449 is merely "encouraged". Any listing will suffice. However, in order to expedite prosecution of the present application attached herewith is a Form PTO-1449 listing the references submitted on July 24, 2000. Therefore, consideration of the information cited therein is respectfully requested.

Claims 1, 2, 5, 6 and 8-10 stand rejected under 35 USC §103(a) as being unpatentable over Applicants' alleged admitted prior art and Lim (U.S. Patent No. 6,404,754); claim 3 stands rejected under 35 USC §103(a) as being unpatentable over Applicants' alleged admitted prior art and Lim in view Dommety (U.S. Patent No. 6,078,575); claim 4 stands rejected under 35 USC §103(a) as being unpatentable over Applicants' alleged admitted prior art, Lim, Dommety and Toth (U.S. Patent No. 5,708,655); claim 7 stand rejected under 35 USC §103(a) as being unpatentable over Applicants' alleged admitted prior art, Lim, and Dommety; and

claims 11 and 12 stand rejected under 35 USC §103(a) as being unpatentable over Applicants' alleged admitted prior art and Dommety. These rejections are traversed for the following reasons. Applicants submit that the features of the present invention as now recited in claims 1-12 are not taught or suggested by Applicants' alleged admitted prior art, Lim, Dommety or Toth whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw these rejections.

Amendments were made to claims 1-12 so as to more clearly describe features of the present invention. Particularly, amendments were made to claims 1-12 so as to more clearly recite that the present invention is directed to a mobile IP network system, a method of switching a connection and a base station controller wherein the mobile IP network system includes a plurality of radio access networks each connected to a mobile stations via radio links and an IP network to which a plurality of packet nodes for transferring IP packets are connected.

According to the present invention each of the radio access networks has at least one base station controller and at least one radio base station which is connected to the base station controller to perform radio communication with a plurality of mobile stations. Further, each of the base station controllers in the radio access network is connected to the plurality of packet nodes through a network, receives an identifier of a previous packet node from another base station controller when one of the mobile stations moved into a control area of the base station controller from a control area of the another base station controller and selects either the previous packet node of a preliminarily designated specific packet node in

accordance with a communication state of the moved mobile station. These features of the present invention provides for the selective carrying out of IP packet communication for the mobile station using a previous identifier of a logical connection having been established between the previous packet node and the mobile station or an identifier of a new logical connection established between the specific node and the mobile station depending communication state of the mobile station.

As described by referring to Fig. 9 of the present application our specification, Applicants' alleged admitted prior art, a registration procedure (T1) of a mobile station 1 to a home agent 5 is performed every time in response to handover of the mobile station from a first radio access network 2A to a second radio access network 2B. In this case, until a new logical connection (ppp) has been established between the mobile station and a packet node 3B which is preliminarily related to the second radio access network 2B, IP packets are sent out from a base station in an area of the first radio access network 2A via a previous logical connection between the mobile station 1 and a packet node 3A which is preliminarily related to the first radio access network 2A. This registration procedure causes some amount of packet loss for the mobile station.

In order to reduce the packet loss, as described by referring to Figs. 10 to 12, the present invention maintains the previous logical connection PPP between the base station 1 and the previous packet node 3A, even if the mobile station has moved into an area of the second radio access network 2B and handover was carried out. In this case, a feature of the present invention resides in that a base

station controller (BSC) 7C of the second radio access network 2B requests the previous packet node 3A to communicate IP packets for the mobile station 1 with BSC 7C while maintaining the previous logical connection having been established between the mobile station and the packet node 3A. In response to the request, the packet node 3A stops the communication with the previous radio access network 2A with respect to 12 packets for the mobile station 1 and starts to transfer T2 packets to BSC 7C. These IP packets include an identifier of the logical connection PPP (feature A)

According to the present invention, when the transmission of IP packets for the mobile station 1 is ceased, a new logical connection PPP is established between the mobile station 1 and the second packet node 3B, and switching of logical connections and registration of the mobile station to the home agent are carried out (feature B).

In order to realize the above described operations, it is another feature of the invention that a plurality of packet nodes and a plurality of base station controllers are connected via a network 104 so that each base station controller can select an arbitrary one of the packet nodes to communicate IP packets (feature C1). This means that each of the base station controllers includes a communication interface for communicating with a plurality of packet nodes (feature C2). In the prior art, each base station controller is connected to a preliminarily assigned packet node fixed through a dedicated line interface.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record

particularly Applicants' alleged admitted prior art, for example, as illustrated in Figs. 8 and 9, Lim, Dommety and Toth whether taken individually or in combination with each other as suggested by the Examiner.

It is clear that Applicants' alleged admitted prior art does not teach or suggest the feature C1 of the present invention described above because each radio access network is connected to predetermined one of packet nodes by fixed connection, namely a dedicated line. There is no teaching or suggestion Applicants' alleged admitted prior art that the IP network to which the radio access network and the packet nodes are connected as recited in the claims. Applicants' alleged admitted prior art also does not teach or suggest the features A, B and C2 of the present invention described above.

Further, Lim discloses only one Gateway 600 in FIG. 2, and a plurality of radio access networks each of which is comprised of a base station (300 or 310) and radio network controller (400 or 410) are directly accommodated to a mobile switching center MSC (500) to which the internet 700 is connected by the gateway 600.

The network configuration of Lim is different from that of the present invention as recited in the claims. Lim does not teach or suggest the problems which are solved by the present invention, and fails to teach or suggest IP packet communication via a selected route on an IP network between a base station controller (radio network controller) and a plurality of packet nodes when handover of a mobile station occurs as in the present invention. Accordingly, Lim does not teach or suggest the features A-C2 of the present invention described above.

Thus, as is quite clear from the above, the features of the present invention as now more clearly recited in the claims are not taught or suggested by Applicants' alleged admitted prior art and Lim whether taken individually or in combination with each other as suggested by the Examiner. Therefore, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 1, 2, 5, 6 and 8-10 as being unpatentable over Applicants' alleged admitted prior art and Lim is respectfully requested.

The above noted deficiencies of Applicants' alleged admitted prior art and Lim are not supplied by any of the other references of record, particularly Dommety and Toth. Specifically, neither Dommety or Toth teach or suggest the features A-C2 of the present invention described above.

Therefore, combining the teachings of Applicants' alleged admitted prior art and Lim with one or more of Dommety and Toth still fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 USC §103(a) rejections of claims 3, 4, 7, 11 and 12 as being unpatentable over Applicants' alleged admitted prior art and Lim in combination with one or more of Dommety and Toth is respectfully requested.


The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-12.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-12 are in condition for allowance. Accordingly, early allowance of claims 1-12 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (520.38794X00).

Respectfully submitted,

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